

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Würmlin et al.

Title: Differential Stream of Point Samples for Real-Time  
3D Video

EXPRESS MAIL mailing label number: <u>EV 102066197 US</u> Date of Deposit: <u>7/21/03</u>
I hereby certify that this correspondence is being deposited with the United States Postal Service as EXPRESS MAIL in an envelope addressed to: The Commissioner of Patents, PO Box 1450, Alexandria, VA 22313-1450, on:
 Diju C. Zhang Name of Depositor Signature

\* \* \*

INFORMATION DISCLOSURE STATEMENT

Commissioner of Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Pursuant to 37 C.F.R. §1.56(a), Applicant hereby cites the following documents (copies enclosed) listed on the attached copy of Form PTO-1449.

This Information Disclosure Statement is filed in accordance with the paragraph of 37 CFR §1.97 checked below:

X 1.97(b) This Information Disclosure Statement is filed:

- (1) Within three months of the filing date of a national application; OR
- (2) Within three months of the date of entry of the national stage of an international application; OR
- (3) Before the mailing of a first Office Action on the merits.

No fee or certification is required.

  1.97(c) This Information Disclosure Statement is filed after the period specified in paragraph (b) above, but before the mailing date of either:

- (1) A Final Action under 37 CFR 1.113; OR
- (2) A Notice of Allowance under 37 CFR 1.311;

AND is accompanied by either:  
(check one)

the Certification under 37 CFR  
1.97(e) as set out below; OR

the fee of \$240.00 under 37 CFR  
1.17(p).

1.97(d) This Information Disclosure Statement is filed  
after the mailing date of either:

- (1) a Final action under 37 CFR 1.113; OR
- (2) A Notice of Allowance under 37 CFR 1.311;

BUT before payment of the Issue Fee, AND is accompanied  
by:

- (1) the Certification under 37 CFR 1.97(e) as  
set out below; AND
- (2) Petition is hereby made under 37 CFR  
1.97(d) for consideration of this  
Information Disclosure Statement; AND,
- (3) Authorization to charge the petition fee  
of \$130.00 as set out in 37 CFR 1.17(i).

If this Information Disclosure Statement is being filed  
under 37 CFR 1.97(c) or 1.97(d), the undersigned Attorney hereby

certifies that:

- each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing date of this Statement;
- or**
- no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, or to the knowledge of the undersigned Attorney after making reasonable enquiry, was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing date of this Statement.

ETH-20

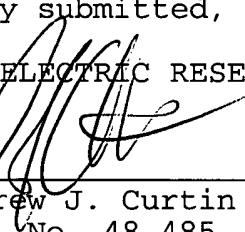
Authorization is hereby given to charge the indicated fee(s) to Deposit Account No. 50-0749.

Please charge any additional fee due for this paper to Deposit Account No. 50-0749.

Respectfully submitted,

MITSUBISHI ELECTRIC RESEARCH LABORATORIES

By:

  
Andrew J. Curtin  
Reg. No. 48,485  
Attorney for Assignee

Mitsubishi Electric Research Laboratories, Inc.  
201 Broadway  
Cambridge, Massachusetts 02139  
(617) 621-7539

Customer No. 022199

Enclosures

~

Form PTO-1449 (modified 2/91)	U.S. DEPT OF COMMERCE Patent and Trademark Office	Attorney Docket Number: ETH-20	Serial Number:
<b>INFORMATION DISCLOSURE CITATION</b>			
(Use several sheets if necessary)		Applicant: Würmlin et al.	
		Filing date: Herewith	Group art area:

**U.S. PATENT DOCUMENTS**

Exam- iner Initial	Patent number	Date	Name	Class	Subclass	Filing date if appropriate
	6,509,902	01/21/2003	Pfister et al.	345	582	
	6,498,607	12/24/2002	Pfister et al.	345	423	
	6,480,190	11/12/2002	Pfister et al.	345	419	
	6,448,968	09/10/2002	Pfister et al.	345	423	
	6,396,496	05/28/2002	Pfister et al.	345	427	
	6,342,886	01/29/2002	Pfister et al.	345	424	

**FOREIGN PATENT DOCUMENTS**

	Document number	Date	Country	Class	Subclass	Translation	
						YES	NO

**OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)**

	Botsch et al., "Efficient High Quality Rendering of Point Sampled Geometry," <i>Thirteenth Eurographics Workshop on Rendering</i> , 2002
	Buehler et al., "Unstructured Lumigraph Rendering. <i>SIGGRAPH 2001 Conference Proceedings</i> , ACM Siggraph Annual Conference Series, pp. 425-432, 2001
	Carceroni et al., "Multi-View scene capture by surfel sampling: From video streams to non-rigid 3D motion, shape & reflectance," <i>Proceedings of the 7<sup>th</sup> International Conference on Computer Vision</i> , pp. 60-67, 2001
	Kanade et al., "Virtualized Reality: Constructing Virtual Worlds from Real Scenes," <i>IEEE Computer Society</i> , pp.34-47, January - March 1997
	Laurentini, Aldo., "The Visual Hull Concept for Silhouette-Based Image Understanding," <i>IEEE Transactions on Pattern Analysis and Machine Intelligence</i> , Vol. 16, No. 2, February 1994
	Matusik et al., in "Image-based visual hulls," <i>Proceedings of SIGGRAPH 2000</i> , pp. 369-374, 2000
	Matusik et al., "Polyhedral visual hulls for real-time rendering," <i>Proceedings of Twelfth Eurographics Workshop on Rendering</i> , pp. 115-125, 2001
	Moezzi et al., "Immersive Video," <i>IEEE Proceedings of VRAIS '96</i> , 1996.
	Mulligan et al., "View-independent Scene Acquisition for Tele-Presence," <i>Computer and Information Science Department Technical Report, MS-CIS-00-16</i> , 2000
	Narayanan et al., "Constructing Virtual Worlds Using Dense Stereo," <i>Proceedings of Sixth IEEE International Conference on</i>

	<i>Computer Vision</i> , pp. 3-10, 1998
	Deering, Michael, "Geometry Compression," <i>Sun Microsystems</i> , 1995
	Pauly et al., "Spectral Processing of Point-Sampled Geometry," <i>ETH Surich</i>
	Pfister et al., "Surfels: Surface Elements as Rendering Primitives"
	Pollard et al., "View Synthesis by Edge Transfer with Application to the Generation of Immersive Video Objects," <i>VRST '98</i> , pp. 91-98, Taipei, Taiwan, 1998
	Polleyfeys et al., "Self-Calibration and Metric Reconstruction in spite of Varying and Unknown Intrinsic Camera Parameters," <i>International Journal of Computer Vision</i> , 1998
	Würmlin et al., in "3D video recorder," <i>Proceedings of Pacific Graphics '02</i> , pp. 325-334, 2002
	Ren et al., "Object Space EWA Surface Splatting: A Hardware Accelerated Approach to High Quality Point Rendering," <i>Eurographics</i> , Vol. 21, No. 3, 2002
	Rusinkiewicz et al., "QSplat: A multi-resolution point rendering system for large meshes," <i>Proceedings of SIGGRAPH 2000</i> , pp. 343-352, 2000
	Vedula et al., "Spatio-temporal view interpolation," <i>Proceedings of the Thirteenth Eurographics Workshop on Rendering</i> , pp. 65-76, 2002
	Vlasic et al., "Opacity Light Fields: Interactive Rendering of Surface Light Fields with View-Dependent Opacity"
	Whetten et al., "A high performance totally ordered multicast protocol," <i>Dagstuhl Seminar on Distributed Systems</i> , pp. 33-57, 1994
	Zwicker et al., "Surface Splatting," <i>Proceedings of SIGGRAPH 2001</i>
Examiner:	Date Considered:

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP .609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.